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UNITED STATES DEPARTMENT OF AGRICULTURE
Bureau of Agricultural Economics
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SESSION: PRODUCTION CAPACITY

DISCUSSION following the address on PRODUCTION POTENTIALITIES by Sherman E. Johnson, Bureau of Agricultural Economics, U. S. Department of Agriculture, at the 22nd Annual Agricultural Outlook Conference, Washington, D. C. November 14, 1944.

DISCUSSIONS by F. B. Northrup, WFA
George W. Hill, WFA
Charles E. Kellogg, BPISAE

DISCUSSION by F. B. Northrup, Director, Office of Materials and Facilities, War Food Administration.

In general terms, I am an optimist about 1945 and about most of the things that are needed to reach the 1945 production goals. With some notable exceptions, I believe that 1945 will be the last year during which materials and equipment needed for the war food program will be produced and distributed under Governmental controls. That forecast is predicated on the hope that the European war will be over by this time next year, but the figures I give you are predicated, in general, on the continuation of the war and on the situation as we now see it. If the war ends before that time these figures may change substantially.

The chances are, however, that there will be no substantial change in any major category within the first six months after the European war ends. I will touch on four main categories omitting a good many small items that we haven't time to discuss.

Farm machinery comes first. As we in the Office of Materials and Facilities see it, in general, the production of farm machinery for the 1945 crop year will be at approximately the same level as for 1944, with a few exceptions; there will be more of some items and less of others. Emphasis will continue to be placed on the production of labor-saving equipment. Incidentally, those are the items which compete most directly with military procurement items, in regard to labor and the things that go to make equipment--castings, engine-bearing equipment, and so on. In terms of dollar value, however, the production picture is quite optimistic.

We usually compare our production figures on farm machinery with those of 1940. In that year the adjusted figure showing the value of farm machinery and equipment appears to be about 350 million dollars, covering some 400 items and excluding heavy track-laying tractors. In 1944, the equivalent figure will range from 505 million to 550 million dollars. In our calculations we consider the end of last fall as the close of the production year. Of that large figure for 1944 nearly 150 million dollars covers repairs, which makes the worth of new machines from 350 to 400 million dollars. That is a high figure but is still considerably less than real requirements appear to be on the farms. We hoped it was enough to meet all of the most essential requirements.

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On specific items of equipment there are three figures in each case: (1) the 1940 production, (2) production for the 1943-44 crop year, and (3) production projected for the 1944-45 crop year,--items now authorized for production in factories.

	<u>1940</u>	<u>1943-1944</u>	<u>1944-1945</u>
Tractors	222,009	188,890	155,128
Corn pickers	11,436	29,936	27,511
Mowers	110,413	116,865	99,695
Rakes, side delivery	28,053	37,309	38,952
Pickup hay balers	2,047	14,315	10,792
(Big increase since prewar production)			
Grain drills, including fertilizer drills	33,248	37,826	42,951
Milking machines	31,526	65,983	57,525
Tractor mounted culti- vators	146,361	178,022	209,338

These are only a few of the items for 1945 now scheduled by manufacturers but there is very grave danger that the production of some items may not be realized. The limiting factor in achieving the schedules will be labor, both in the factories and in the foundries which make castings to furnish component parts of this equipment. The Government is doing everything it can to lick that problem of labor. It is much too early to forecast whether it will be solved entirely. It is one of the most severe labor questions still in the war picture, and is particularly severe in this type of production because farm-machinery manufacturers use the same kind of labor as the manufacturers of heavy army trucks and similar equipment. Problems of raw materials are no longer involved in the matter of farm machinery. Practically speaking, we can obtain all the steel and other material that we need. That has been true for several months. The bottleneck will be foundry capacity and labor problems in the factories. I wouldn't want to forecast actual decrease in production on authorized schedules, but I must sound a note of warning.

Regarding fertilizer supplies for the 1945 crop year, the prospect is not so optimistic as it was for 1944. In total plant nutrients it may be slightly below 1944. Here are the figures:

Nitrogen, in terms of tons of N
 368,000 -- 1935-39 average yearly consumption
 631,000 -- 1943-1944 crop year consumption
 588,000 -- prospective 1944-45 supply

The limiting factor will continue to be war demands; the amount of ammonium nitrate we can get for agriculture depends largely on the military requirements.

The imports of nitrate of soda from Chili are expected to be about 850,000 tons this year, 200,000 above last year. Chilean nitrate, sodium nitrate and synthetic nitrate of soda should be about 1,045,000 tons, compared with 900,000 tons for use in the 1943-44 year.

Phosphorous, stated in terms of 18-percent superphosphate; the figures are

2,343,000 -- 1935-39 average yearly consumption
 7,500,000 -- 1943-44 crop year consumption
 6,500,000 -- 1944-45

Potash shows a substantial increase:

373,000 -- 1935-39 average yearly consumption
 604,000 -- 1943-44 consumption
 725,000 -- 1944-45

In terms of total plant nutrients, N, P_2O_5 , and K_2O , expressed in tons again, the three figures are:

1,499,000 -- 1935-39 average yearly consumption
 2,585,000 -- 1943-44 crop year consumption
 2,573,000 -- 1944-45

Containers--what about packages for food once it has been produced? In two out of five categories the picture is comparatively good, including both metal and glass containers. It seems probable that for 1945 the restrictions imposed by the Government with respect to end use be either eliminated or very substantially relaxed in regard to both glass containers and metal cans. All restrictions on cans will be eliminated by War Production Board, unless the situation should change overnight (which I doubt) leaving only restrictions in the amount of tin that manufacturers can use in making containers.

The supply indicates that fiber containers will possibly still be tight, but all essential food uses will be taken care of by reason of War Production Board controls, which channel the product to the most essential uses.

Wooden containers will continue tight, and in most categories will necessitate continuation of the reuse program wherever possible. WPB controls are so regulated that they channel wood to the most essential end uses, and among them, of course, are food uses.

Both cotton and burlap bags will continue very tight in 1945. Scarcities of cotton textiles are largely due to shortages of labor in the textile factories, but some of that tightness is due to the fact that the Government is channeling considerable textiles to clothing manufacturers in order to avoid consumer rationing of clothing.

Tight control of burlap may be necessary before long and in the case of burlap bags will necessitate a continuing reuse program but we hope that all essential food-use programs can be substantially met.

Once we produce food and package it, what about processing it? In terms of material and equipment to do the processing let us consider home processing first: the two major items of equipment our Office has been concerned with

during the past year or two now appear to be completely over the hill as far as important supply is concerned. There is no longer any necessity for governmental controls in the distribution and sale of pressure canners. For 1945 we forecast the production of about 630,000 pressure canners, which will be 50 percent more than for the year 1944. Equally important is the fact that they are being produced now and will be through the winter, so they should be on the shelves, ready for sale, in the late winter and the spring. The picture regarding sealers is very good. Some 40,000 are scheduled for production in 1945, which is the largest production on record, and compares with 37,000 in 1944.

With one major exception, all facilities seem to be adequate to meet all the present known requirements for processing. The exception is found in the field of dry milk powder, both skim and whole, where a large Government program is going on to increase production. In the matter of public cold storage, we are attempting to get, by next spring, some additional 13,000,000 cubic feet. All of that has not yet been applied for or approved as yet, but probably will before long. Except for these items I am not aware of any extensive program sponsored by the Government to increase facilities in order to take care of this large food supply that is in prospect for 1945.

FARM LABOR PROSPECTS -- 1945 AND POST-WAR

Discussion by George W. Hill, Chief, Program Branch, Office of Labor, of PRODUCTION ADJUSTMENTS -- 1945 AND POST-WAR by Sherman E. Johnson, Head, Division of Farm Management and Costs, at 22nd Annual Agricultural Outlook Conference, Washington, D. C., November 14, 1944.

Dr. Johnson gives passing attention only to farm labor, as one of the several problems of production in 1945 and the immediate years ahead. He assumes, apparently, that the discussants will delve more deeply into their respective fields. Hence, it becomes my responsibility to discuss in more detail the labor aspects of agricultural production.

In order that you may follow more closely the details of my discussion, let me at the very start make clear my general position: I see little in the offing to indicate that the farm labor problem in its entirety will be materially eased in 1945; neither do I see prospects of farm labor continuing to be anything other than in general a tight situation for a while at least beyond 1945. From a farm labor point of view, therefore, I submit to you that I am not yet ready to discuss production adjustments, but that I must continue to be concerned with production possibilities.

We are finishing this agricultural year with a record production. The weather has made this possible. The farmer has likewise responded to our combined efforts in agricultural research and education. Improved seeds, greater use and more effective distribution of improved fertilizers, and other practices have resulted. The concentration in our reduced machinery manufacture of labor-saving farm machinery is still another factor. We must also recognize the stimulation on production of our recent favorable agricultural prices. In addition to all of these production stimuli is the major one of labor.

In recent years we have often paid our respects to the manner in which the farmer has increased the length of his own work day, and brought into the labor force all of his available family members, young and old of either sex.

There is another adjustment that he has made, however, which we have not discussed. I refer to the way in which the farmer has become a more efficient employer or user of labor. With labor scarce and inexperienced, the farmer has had to learn the value of close supervision and effective training of his labor force.

The Emergency Farm Labor Program of the War Food Administration in which the field staff of the Office of Labor and the Agricultural Extension Services have cooperated, has made for more efficient utilization of available farm labor. Through the transportation and distribution of both domestic and foreign labor under this program, that labor has been provided only when actually existent and demonstrable needs dictated the movement of this labor. Because of the cost of labor transportation and importation, the Government necessarily has had to enter into business-like contracts with farmers in the use of this labor. These contracts eliminate surplus pools, they require both the farmer and the Government to acknowledge a concrete labor shortage before labor is supplied.

This cooperative venture between individual farmers and the Government through specific contracts has developed in our farmer a new appreciation of the value in planning his work to assure maximum returns from his labor expenditure.

The record production which Dr. Johnson aptly described as episodic can be matched with the progress in employer-employee relationships in agriculture. The extensive improvements made by the farmer in labor housing, in the providing of recreational facilities, in improving transportation facilities, in the development of bonus and profit-sharing plans, in medical care -- all have played their part in enabling the farmer to achieve maximum production with his labor force.

Looking ahead and assuming that production levels of 1943-44 will be required for the remainder of the war period and for some time thereafter, what are the possible sources from which we may expect relief for the existing tight farm labor situation?

These sources are only two: the return of farm laborers from the armed forces, and the return of farm laborers from urban industry.

The first of these is primarily contingent upon the date of victory in our two major battle areas. None of us concerned with the farm labor program can see any hope of the return of farm laborers from our armed services in time to enter the 1945 production period.

On the other hand, that there will be a cutting back of war contracts in urban industries in 1945 is assumed by all. Let us not, however, jump to the conclusion that these cutbacks necessarily mean unemployment. We are now going through a period of reconversion within the production of urgent military requirements; some military items are being eliminated, but the production of other items is being expanded in greater quantities which require the released labor.

When conditions make possible less war production, then we can see the revival of peace-time civilian production. Those concerned with manpower problems in war production already are aware of a serious situation in the premature migration of workers from war industries to what the workers regard as permanent peace-time jobs. This is the trend that will continue in industrial employment for a considerable period after the net reduction of war production begins in earnest.

Let us remember however that there will be a selective process in reemployment in peace-time industry. Our war-time production in industry has been possible only because of the bringing into the labor market of unusual sources of supply. It is not reasonable to expect these unusual sources of supply -- women, children, the aged, and the physically handicapped -- to continue in large numbers in the labor force. And when they drop out of the labor force I do not think it accurate, in terms of American culture, to add all of them to the list of the unemployed.

It is estimated that since January 1940 our farm population has slumped 4,748,000. 1,650,000 of these have gone into the armed forces. The remainder have shifted from farms because of urban employment on the part of a household member. In addition to this loss of farm population, additional millions have migrated from rural villages and from small towns into the larger urban areas. It was from this reservoir that we secured our large supply of seasonal farm workers. There is nothing in our history to show that either of these migrating groups will return to the rural areas until necessity dictates.

The mal-distribution of the rural population resulting from World War I can be measured in terms of hundreds of thousands. The mal-distribution of the rural population today must be measured in terms of millions.

We have the period following World War I to give us a partial indication of what to expect. As late as the fall of 1920, the Department of Labor was compelled to continue permitting the free flow of Mexican Nationals across the international boundary to meet agricultural labor shortages. A special committee, appointed by the Secretary of Labor, reported on August 12, 1920, two years after the armistice, that Mexican Nationals should be allowed to continue to enter without restrictions if American agriculture was to meet the production requirements of 1921.^{1/}

To be sure we are in the realm of prediction when we discuss farm labor potentialities for 1945 and years ahead. The uncertainties of predicting VE day and the effectiveness of the roll back in our industrial super organization I fully appreciate. But as I said above, we still have a production job ahead -- not one of adjustment. Hence, if we err in our prediction of labor needs, we must err on the positive side; we can not afford to err on the negative side.

In view of the foregoing, we in the Office of Labor have, therefore, no alternative to recommending to the Congress that the farm labor program of 1944 be continued in 1945. And, incidentally, our farm labor appropriation is one of the few set up on a calendar year basis. Hence, the necessity of making our decisions now, not waiting for a more favorable date next spring.

There will be some shift in the composition of our labor force in 1945 as compared to 1944. This will consist primarily in the replacement by prisoners of war, not of many of the imported foreign laborers, but largely of the loss of large numbers of our unusual domestic labor force. It is inevitable that in 1945 we will find a changed psychology in the city worker who volunteered for farm employment during the past few years, who gave up his vacation to pitch in and help in our gigantic harvests. Recruiting this group has been more difficult this year than last. It will be even more difficult in 1945.

In total, there will be just as great need to provide farm labor assistance to our farmer in 1945 as there was in 1944. In some areas of the country this need will be even greater, and I refer to the grain, sugar beet, and potato producing areas of the Great Plains, to the production areas of the Inter-Mountain States, and to the far western States. There should be some easing of the situation on the Atlantic seaboard, especially if gasoline and tires are available to the migratory labor force of the south.

In addition to the changing attitude of the part-time urban farm worker, let me suggest a very real change in the attitude of the farmer. The increased necessity of producing under pressure a larger volume of food and fibre, and the resulting mounting production costs, are making the farmer, as I stated above, conscious of the quality of his labor force. He is no longer in the mood to accept the policy that his labor must come from women, children, the aged, and the infirm. He demands and needs able-bodied manpower.

What I am trying to say is that, quite apart from the available labor supply, a significant trend in management has been achieved by the farmer that will not quickly be retarded or go into reverse. His present operating plant represents too great an outlay of money and energy to invite the taking of needless risks. Asking for anything less than adequate manpower, on his part, involves a risk.

Before I close, let me call your attention to a strange phenomenon: agricultural production in every year since 1940 has increased. In every year over this period the reported hired farm labor force has decreased. Some of the trends I discussed earlier have made this apparent contradiction possible. For purposes of the populationist, however, may I be permitted to cast a doubt upon the interpretation of this reported trend? I have only a hunch on which to proceed, but this hunch is a result of

having visited most of our larger farming areas and watching the labor force at work. I would like to leave with the populationist the hypothesis that a changing definition has occurred in the farmer's mind in the concept 'hired labor'.

I have been led to speculate on the possibility of farmers, prior to the emergency period, reporting as hired laborers on both Census schedules and crop reporters' estimates, of family members as hired laborers. I observed this trend in one of my last studies in farm labor the summer of 1941. With the introduction of the American farmer to an efficient farm labor recruitment and placement program, many farmers have gotten a changed view regarding the concept of hired labor. Because of the necessity of conforming to the administrative features of a public farm labor program, farmers are becoming conscious of the distinction between unpaid family labor and hired labor.

Before accepting, therefore, with finality the currently accepted meaning of the reported diminishing hired farm labor force, I suggest that we study the trend to see whether the concept we are measuring has not shifted, resulting therefore in a lack of comparability in our results in 1944 as compared to earlier years.

1/ Report of Special Committee Appointed by the Secretary of Labor to Investigate Complaints Against the Temporary Admission of Aliens for Agricultural Purposes., U. S. Department of Labor, Washington, D. C., August 12, 1920.

DISCUSSION by Charles E. Kellogg, Chief, Division of Soil Survey,
U. S. Department of Agriculture.

Since Dr. Sherman Johnson has treated the subject assigned to him so ably and completely, I should only like to underline some of the more important implications of his presentation.

First of all, we must be greatly impressed by the increased efficiency of the individual farm family. It is nothing less than remarkable, considering the amount of the increase and the very short time in which it has occurred. From this we can get a glimpse of the enormous possibilities of increasing efficiency on family farms if our present technical knowledge were really put to general use.

Parenthetically, I should like to recommend a study of these implications to those agriculturists who lay such great stress on increasing the size of farms. That idea has been emphasized so much with so few results that perhaps it would be more helpful to explore carefully the obvious possibilities for increased efficiency through the more intensive application of scientific principles on existing farms.

Dr. Johnson mentioned the great importance of new varieties of crops, using hybrid corn as an example. He could have given, of course, several other important examples.

Perhaps even more emphasis should be given the use of lime and fertilizers. Although many farmers have used these materials for a long time, primarily in terms of increases in crop yields, only in recent years have we seen the truly enormous possibilities that these materials may afford small farmers on land naturally low in plant nutrients. In this connection it is necessary to emphasize the importance of lime and fertilizers in widening the choice of crops that farmers may grow as well as their effects upon yield and quality of crops. The rather simple fact that through the use of lime and fertilizers a farmer may substitute alfalfa for broomsedge and old field pine has tremendous significance to the whole organization and efficiency of his farm.

A satisfactory way must be found to encourage millions of our small farmers to realize the benefits of lime, phosphate, potash, and other soil amendments, according to the requirements of their soils for effective crop growth.

The use of these materials is essential for increasing individual efficiency to the point where the farmer on the small farm really has a job -- a job and an income that will sustain his family in the American tradition.

These materials are essential to the vigorous growth of grasses and legumes which, in turn, are essential to the control of run-off and soil erosion. There can be no farm plan that will achieve either production or soil conservation that does not include the supplying of lime and fertilizers -- especially the basic minerals -- according to need for vigorous plant growth.

These materials are essential on many farms for those rotations of crops, and kinds of crops, that will insure good nutrition. At this point, we should

distinguish clearly between the important effects of lime and fertilizer upon the composition of the crops to which they are applied, and the much more important effect they have in widening the farmer's choice of crops. We are not so vitally concerned with the effects of lime and phosphate, for example, upon the composition of either poverty grass or white clover, as we are with the more important fact that by using the necessary minerals farmers can substitute white clover for poverty grass. It is through proper soil management that farmers may grow efficiently the crops that are high in proteins and minerals.

Dr. Johnson's paper has given us a good idea of the over-all dimensions of our agricultural plant, and of our future plant in 1950. There will be places for a great many new farmers for two principal reasons: (1) A large number of our present farmers are old and will need to retire as soon as they feel they can in fairness to themselves and without diminishing our war effort and (2) we are having, during this war, what amounts to overemployment on farms of old people, women, and children. On millions of our farms everyone is working early and late. Certainly this should not be necessary in post-war America, and I should dislike very much to see such overemployment continued any longer than necessary.

But let us not confuse the need for new farmers with the need for new farms. According to estimates given us by Dr. Johnson the need for new land does not appear to be great. We have the land -- lots of it -- land that can be made fit for crop production through irrigation, drainage, clearing, both drainage and clearing, or both irrigation and drainage. This great body of land is a kind of insurance against the future. Under present conditions most of it remains in about the same fundamental condition it always has been. If it should be developed through reclamation of various sorts and then later it should be found that we didn't need the products, it might be returned to a wild state after much damage.

Another point about this new land that can be developed: we shall have the same kinds of agronomic problems with it that we have with our present acres. There will be problems of erosion control, of fertilization, of the maintenance of organic matter, and of avoiding excess salts. The development of new land in the United States will not relieve us of agronomic problems. There is no large area of land in this country remaining to be developed that will be reasonably free of such problems.

Of the new land to be developed there will be a choice between group settlement and settlement by infiltration into existing communities. There is plenty of land for either type. Experience in this and other countries has shown clearly that settlement by infiltration, other things being approximately equal, is much cheaper and more satisfactory to the individual settler. This doesn't mean that some group settlement will not be necessary. We shall need it in Alaska and in certain parts of the western States where at least some agricultural production is necessary to develop local food supplies and to broaden the economic base of individual communities that might otherwise depend too exclusively upon one enterprise, such as forestry, mining, grazing, or servicing transportation lines.

Thus the implications of Dr. Johnson's paper would seem to caution us against wholesale creation of new farms out of our storehouse of good land yet

unused. Should we develop too much of it and find we did not have a use for the products, farmers as a whole might find themselves greatly underemployed through ruinous farm prices, or drastic restrictions of production, or some combination of these.

A final word about returning veterans and war workers. Reflection on the size and probable efficiency of our agricultural plant in the United States underlines the vital importance of doing everything possible to guide those people gathered up by the war program into the fighting services and war industries, who want to return to the land -- to guide them to good land where they may have real opportunities, and to warn them against "cheap" land. They will need to be completely aware of the skills required in agriculture and of the hazards of farming. From the letters that go over my desk I realize that many of them do not have this awareness. Many of them are looking for cheap land, and we all know the inevitable result of the combination of cheap land and poor skills. Most of those that find cheap land will find themselves in the wrong place. Such farm families are likely to become burdens to the Government, but of far greater importance will be their own loss of effort and loss of spirit.

This problem, which is becoming apparent already, is a great challenge to the agricultural leadership in the Department, in the State Colleges, in the farm organizations, and above all, in the rural communities. It is late already for the complete organization of agricultural advisers and farmers to help these people. Some States have already taken important steps in this direction. Just as an example, the program in Michigan may be commended.

All of us must realize that our talk about the relationship between farmers and the land is academic indeed if our consideration is confined to agriculture itself. Unless there are abundant jobs in industry, and good jobs, there will be a tremendous movement of people back to the land, a movement that we shall be powerless to prevent or, perhaps even guide, regardless of the obvious effects upon our agriculture.

